

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application. Please amend claims 11, 35, 49-52 and 67-70 as follows:

Listing of Claims

Claims 1-10 (Canceled)

11. (Currently Amended) A camera apparatus for encoding a picture signal received from photographing means and an audio signal received from audio inputting means, the camera apparatus comprising:

picture encoding means for encoding the picture signal received from the photographing means corresponding to a first encoding method or a second encoding method and generating first encoded picture data or second encoded picture data, respectively;

controlling means for controlling and selecting the first encoding method or the second encoding method corresponding to a selected processing mode,

wherein said controlling means controls said picture encoding means to encode the picture signal received from the photographing means corresponding to the first encoding method when a mode for capturing still picture data ~~without audio data~~ has been selected in the camera apparatus,

wherein said controlling means controls said picture encoding means to encode the picture signal received from the photographing means corresponding to the second encoding method when a mode for capturing (a) still picture data with audio data and (b) moving picture data with audio data has been selected in the camera apparatus,

wherein for capturing still picture data with audio data, said controlling means (1) generating P or B picture data such that motion vectors are 0 for an entire frame, and (2) copying a chronologically preceding picture as the encoded picture,

wherein for the second encoding method after encoding the picture data, said controlling means encodes an audio data signal, multiplexes encoded I picture signal or the generated P or B picture data and the encoded audio signal, and captures the multiplexed signal when the mode for recording both the picture data and the audio data has been selected in the camera apparatus, [[and]]

wherein the multiplexed data is composed of packs with a fixed length, and wherein for multiplexed still picture data and audio data a first pack contains encoded I picture data, encoded P or B picture data and encoded audio data, a time period of the encoded P or B picture data being the same as a time period of the encoded audio data, and a second pack contains encoded audio data and encoded P or B picture data, and

wherein when still picture data with audio data is captured, simultaneously generating the first and second encoded picture data and encoded audio data.

12. (Original) The camera apparatus as set forth in claim 11,
wherein the first encoding method is an encoding method corresponding to JPEG format or equivalent format, and
wherein the second encoding method is an encoding method corresponding to MPEG video format or equivalent format.

13. (Canceled).

14. (Previously Presented) The camera apparatus as set forth in claim 11,
wherein said controlling means causes a picture signal received from the photographing means to be stored to a first area of a memory means and the first encoded picture data or the multiplexed data of the encoded picture data and the encoded audio data to be stored to a second area of the memory means.

15. (Previously Presented) The camera apparatus as set forth in claim 14, further comprising:

recording means for recording the encoded picture data or the multiplexed data to a record medium,

wherein said controlling means writes the multiplexed data to the memory means, reads the multiplexed data from the memory means, causes said recording means to record the multiplexed data that is read from the memory means to the record medium, causes said picture encoding means to encode a picture signal corresponding to the first encoding method, writes the encoded signal as first encoded picture data to the memory means, reads the first encoded picture data from the memory means, and causes the recording means to record the first encoded picture data to the record medium when the mode for recording both picture data and audio data has been selected in the camera apparatus.

16. (Previously Presented) The camera apparatus as set forth in claim 11,
wherein said picture encoding means has:

a DCT portion for performing a cosine transform process for an input picture signal;

a quantizing portion for quantizing coefficient data received from the DCT portion; and
a variable length code encoding portion for encoding an output signal of the quantizing portion using a first encoding table or a second encoding table with variable length code, and
wherein the first encoding table or the second encoding table of the variable length code encoding portion is selected corresponding to an encoding method selected by said controlling means.

17. (Previously Presented) The camera apparatus as set forth in claim 16,
wherein said picture encoding means has:
a header adding portion for adding one of a first header or a second header corresponding to the encoding method selected by said controlling means.

18. (Canceled)

19. (Previously Presented) The camera apparatus as set forth in claim 11,
wherein each of the packs contains N picture frames and/or N audio frames (where N is any integer).

20. (Original) The camera apparatus as set forth in claim 11, further comprising:
recording means for recording the encoded picture data or the encoded audio data to a record medium.

21. (Previously Presented) The camera apparatus as set forth in claim 11, further comprising:

operating means for causing the camera apparatus to perform a capture operation,
wherein said controlling means encodes an audio signal in a time period of which said operating means is being pressed so as to generate encoded audio data.

22. (Previously Presented) The camera apparatus as set forth in claim 11, further comprising:

operating means for causing the camera apparatus to perform a capture operation,
wherein said controlling means encodes an audio signal after said operating means is pressed until a predetermined time period elapses so as to generate encoded audio data.

23. (Previously Presented) The camera apparatus as set forth in claim 11, further comprising:

reproducing means for reproducing encoded picture data or encoded audio data from a record medium;

picture decoding means for decoding the encoded picture data;

displaying means for displaying the picture data; and

audio outputting means for outputting audio data,

wherein said controlling means causes the memory means to store the encoded picture data or the encoded audio data reproduced from said reproducing means and decodes the encoded audio data stored in the memory means,

wherein said picture decoding means decodes the encoded picture data stored in the memory means,

wherein said displaying means displays the decoded picture data, and

wherein said audio outputting means outputs the decoded audio data.

24. (Previously Presented) The camera apparatus as set forth in claim 11,
wherein the photographing means outputs a picture signal in XGA or VGA format when a still picture photographing mode has been selected in the camera apparatus, and
wherein the photographing means outputs a picture signal of which the input picture signal received from the photographing means has been thinned out by around 3 when a moving picture photographing mode has been selected in the camera apparatus.

Claims 25-34 (Canceled)

35. (Currently Amended) A recording method for a camera apparatus for encoding a video signal received from photographing means and an audio signal received from audio inputting means and storing the encoded signals to memory means, the recording method comprising the steps of:

encoding the video signal, received from the photographing means, corresponding to a first encoding method and storing ~~[[the]]~~ a first encoded video data to the memory means when a mode for recording still video data ~~without audio data~~ has been selected in the camera apparatus;
and

encoding the video signal, received from the photographing means, corresponding to a second encoding method and storing [[the]] a second encoded video data to the memory means along with the encoded audio data when a mode for recording (a) still video data with audio data and (b) moving video data with audio data has been selected in the camera apparatus,

when the mode for still video data with audio data is selected, generating P or B picture data such that motion vectors are 0 for an entire frame and copying a chronologically preceding picture as the encoded picture, and

for the second encoding method after encoding the video signal, encoding an audio data signal, multiplexing encoded I video signal or generated P or B picture data and the encoded audio signal, and storing the multiplexed signal to the memory means when the mode for recording both the video data and the audio data has been selected in the camera apparatus,

wherein the multiplexed data is composed of packs with a fixed length, and wherein for multiplexed still video data and audio data a first pack contains encoded I video data, encoded P or B picture data and encoded audio data, a time period of the encoded P or B video data being the same as a time period of the encoded audio data, and a second pack contains encoded audio data and encoded P or B picture data, and

wherein when still video data with audio data is captured, simultaneously generating the first and second encoded video data and encoded audio data.

Claims 36-48 (Canceled)

49. (Currently Amended) A camera apparatus for encoding a picture signal received from photographing means and an audio signal received from audio inputting means and storing the encoded signals to memory means, the camera apparatus comprising:

video encoding means for encoding the picture signal received from the photographing means corresponding to a first encoding method or a second encoding method and generating first encoded picture data or second encoded picture data, respectively;

controlling means for controlling a storing process of data to the memory means and selecting the first encoding method or the second encoding method corresponding to a selected record mode,

wherein said controlling means controls said video encoding means to encode the picture signal received from the photographing means corresponding to the first encoding method when a mode for recording still picture data ~~without audio data~~ has been selected in the camera apparatus, and

wherein said controlling means controls said video encoding means to encode the picture signal received from the photographing means corresponding to the second encoding method when a mode for recording (a) moving picture data with audio data and (b) still picture data with audio data has been selected in the camera apparatus,

wherein for recorded still picture data with audio data, said controlling means generating P or B picture data such that motion vectors are 0 for an entire frame and copying a chronologically preceding picture as the encoded picture,

wherein for the second encoding method after encoding the picture data, said controlling means encodes an audio data signal, multiplexes I encoded picture signal or the generated P or B picture data and the encoded audio signal, and captures the multiplexed signal when the mode for

recording both the picture data and the audio data has been selected in the camera apparatus,

[[and]]

wherein the multiplexed data is composed of packs with a fixed length, and wherein for multiplexed still picture data and audio data a first pack contains encoded I picture data, encoded P or B picture data and encoded audio data, a time period of encoded the P or B picture data being the same as a time period of the encoded audio data, and a second pack contains encoded audio data and encoded P or B picture data, and

wherein when still picture data with audio data is captured, simultaneously generating the first and second encoded picture data and encoded audio data.

50. (Currently Amended) A camera apparatus for encoding a picture signal received from photographing means and an audio signal received from audio inputting means and processing the encoded signals, the camera apparatus comprising:

video encoding means for encoding the picture signal received from the photographing means corresponding to a first encoding method or a second encoding method and generating first encoded picture data or second encoded picture data, respectively;

controlling means for controlling a processing process of data and selecting the first encoding method or the second encoding method corresponding to a selected processing mode,

wherein said controlling means controls said video encoding means to encode the picture signal received from the photographing means corresponding to the first encoding method when a mode for processing still picture data ~~without audio data~~ has been selected in the camera apparatus, and

wherein said controlling means controls said video encoding means to encode the picture signal received from the photographing means corresponding to the second encoding method when a mode for processing (a) still picture data with audio data and (b) moving picture data with audio data has been selected in the camera apparatus,

wherein for processing still picture data with audio data, said controlling means generating P or B picture data such that motion vectors are 0 for an entire frame and copying a chronologically preceding picture as the encoded picture,

wherein for the second encoding method after encoding the picture data, said controlling means encodes an audio data signal, multiplexes encoded I picture signal or the generated P or B picture data and the encoded audio signal, and captures the multiplexed signal when the mode for recording both the picture data and the audio data has been selected in the camera apparatus, [[and]]

wherein the multiplexed data is composed of packs with a fixed length, and wherein for multiplexed still picture data and audio data a first pack contains encoded I picture data, encoded P or B picture data and encoded audio data, a time period of the encoded P or B picture data being the same as a time period of the encoded audio data, and a second pack contains encoded audio data and encoded P or B picture data, and

wherein when still picture data with audio data is captured, simultaneously generating the first and second encoded picture data and encoded audio data.

51. (Currently Amended) A camera apparatus for encoding a picture signal received from photographing means and an audio signal received from audio inputting means and transmitting the encoded signals, the camera apparatus comprising:

video encoding means for encoding the picture signal received from the photographing means corresponding to a first encoding method or a second encoding method and generating first encoded picture data or second encoded picture data, respectively;

controlling means for controlling a transmitting process of data and selecting the first encoding method or the second encoding method corresponding to a selected transmitting mode,

wherein said controlling means controls said video encoding means to encode the picture signal received from the photographing means corresponding to the first encoding method when a mode for transmitting still picture data ~~without audio data~~ has been selected in the camera apparatus, and

wherein said controlling means controls said video encoding means to encode the picture signal received from the photographing means corresponding to the second encoding method when a mode for transmitting (a) still picture data with audio data and (b) moving picture data with audio data has been selected in the camera apparatus,

wherein for transmitting still picture data with audio data, said controlling means generating P or B picture data such that motion vectors are 0 for an entire frame and copying a chronologically preceding picture as the encoded picture,

wherein for the second encoding method after encoding the picture data, said controlling means encodes an audio data signal, multiplexes encoded I picture signal or the generated P or B picture data and the encoded audio signal, and captures the multiplexed signal when the mode for recording both the picture data and the audio data has been selected in the camera apparatus,

[[and]]

wherein the multiplexed data is composed of packs with a fixed length, wherein for multiplexed still picture data with audio data a first pack containing encoded I picture data,

encoded P or B picture data and encoded audio data, a time period of the encoded P or B picture data being the same as a time period of the encoded audio data, and a second pack containing encoded audio data and encoded P or B picture data, and

wherein when still picture data with audio data is captured, simultaneously generating the first and second encoded picture data and encoded audio data.

52. (Currently Amended) A method for encoding a picture signal received from photographing means and an audio signal received from audio inputting means, the method comprising the steps of:

encoding, by an encoder, the picture signal received from the photographing means corresponding to a first encoding method or a second encoding method to generate first encoded picture data or second encoded picture data, respectively;

controlling by a controller a storing process and selecting the first encoding method or the second encoding method corresponding to a selected processing mode,

encoding the picture signal corresponding to the first encoding method when a mode for capturing still picture data ~~without audio data~~ has been selected in the camera apparatus,

encoding the picture signal corresponding to the second encoding method when a mode for capturing (a) still picture data with audio data and (b) moving picture data with audio data has been selected,

when capturing still picture data with audio data, generating P or B picture data such that motion vectors are 0 for an entire frame and copying a chronologically preceding picture as the encoded picture, and

for the second encoding method after encoding the picture signal, encoding the audio data signal received from the audio input means, multiplexing encoded I video signal or generated P or B picture data and the encoded audio signal, and storing the multiplexed signal to the memory means when the mode for recording both the video data and the audio data has been selected in the camera apparatus,

wherein the multiplexed data is composed of packs with a fixed length, wherein for multiplexed still picture data and audio data a first pack containing encoded I video data, encoded P or B video data and encoded audio data, a time period of the encoded P or B video data being the same as a time period of the encoded audio data, and a second pack containing encoded audio data and encoded P or B picture data, and

wherein when still picture data with audio data is captured, simultaneously generating the first and second encoded picture data and encoded audio data.

53. (Previously Presented) The method as set forth in claim 52,

wherein the first encoding method is an encoding method corresponding to JPEG format or equivalent format, and

wherein the second encoding method is an encoding method corresponding to MPEG video format or equivalent format.

54. (Canceled)

55. (Previously Presented) The method as set forth in claim 52,

wherein a picture signal received from the photographing means is stored to a first area of the memory means and the encoded picture data or the multiplexed data of the encoded picture data and the encoded audio data is stored to a second area of the memory means.

56. (Previously Presented) The method as set forth in claim 55, further comprising the steps of:

recording the encoded picture data or the multiplexed data to a record medium,
wherein the multiplexed data is written to the memory means, the multiplexed data is read from the memory means, the recording means is caused to record the multiplexed data that is read from the memory means to the record medium, a picture signal corresponding to the first encoding method is encoded, the encoded signal is written as first encoded picture data to the memory means, the first encoded picture data is read from the memory means, the first encoded picture data is recorded to the record medium when the mode for recording both picture data and audio data has been selected.

57. (Previously Presented) The method as set forth in claim 52, further comprising the steps of:

performing a cosine transform process for an input picture signal;
quantizing coefficient data received from the cosine transform process; and
encoding an output signal of the quantizing step using a first encoding table or a second encoding table with variable length code, and
wherein the first encoding table or the second encoding table of the variable length code encoding portion is selected corresponding to a selected encoding method.

58. (Previously Presented) The method as set forth in claim 57, further comprising the step of:

adding one of a first header or a second header corresponding to the selected encoding method.

59. (Canceled)

60. (Previously Presented) The method as set forth in claim 52, wherein each of the packs contains N picture frames and/or N audio frames (where N is any integer).

61. (Previously Presented) The camera apparatus as set forth in claim 52, further comprising the step of:

recording the encoded picture data or the encoded audio data to a record medium.

62. (Previously Presented) The method as set forth in claim 52, further comprising the steps of:

performing a recording operation,

wherein an audio signal is encoded in a time period during said recording operation so as to generate encoded audio data.

63. (Previously Presented) The method as set forth in claim 52, further comprising the steps of:

performing a recording operation,

wherein an audio signal is encoded after said recording operation is completed so as to generate encoded audio data.

64. (Previously Presented) The method as set forth in claim 52, further comprising the steps of:

reproducing encoded picture data or encoded audio data from a record medium;

decoding the encoded picture data;

displaying the picture data; and

outputting the audio data,

storing the encoded picture data or the encoded audio data reproduced from said reproducing means, and

decoding the encoded audio data,

wherein said picture decoding means decodes the stored encoded picture data,

wherein said displaying means displays the decoded picture data, and

wherein said audio outputting means outputs the decoded audio data.

65. (Previously Presented) The method as set forth in claim 52,
wherein the photographing means outputs a picture signal in XGA or VGA format when a still picture photographing mode has been selected, and

wherein the photographing means outputs a picture signal of which the input picture signal received from the photographing means has been thinned out by around 3 when a moving picture photographing mode has been selected.

66. (Canceled)

67. (Currently Amended) A method for encoding a picture signal received from photographing means and an audio signal received from audio inputting means, comprising the steps of:

encoding, by an encoder, the picture signal received from the photographing means corresponding to a first encoding method or a second encoding method to generate first encoded picture data or second encoded picture data, respectively;

controlling a processing process and selecting the first encoding method or the second encoding method corresponding to a selected processing mode,

encoding the picture signal corresponding to the first encoding method when a mode for processing still picture data ~~without audio data~~ has been selected,

encoding the picture signal corresponding to the second encoding method when a mode for processing (a) still picture data with audio data and (b) moving picture data with audio data has been selected,

when processing still picture data with audio data, generating P or B picture data such that motion vectors are 0 for an entire frame and copying a chronologically preceding picture as the encoded picture, and

for the second encoding method after encoding the picture signal, encoding the audio data signal received from the audio inputting means, multiplexing encoded I video signal or generated P or B picture data and the encoded audio signal, and storing the multiplexed signal to the memory means when the mode for recording both the video data and the audio data has been selected in the camera apparatus,

wherein the multiplexed data is composed of packs with a fixed length, for the multiplexed still picture data and audio data a first pack containing encoded I video data, encoded P or B video data and encoded audio data, a time period of the encoded P or B video data being the same as a time period of the encoded audio data, and a second pack containing encoded audio data and encoded P or B picture data, and

wherein when still picture data with audio data is captured, simultaneously generating the first and second encoded picture data and encoded audio data.

68. (Currently Amended) A method for encoding a picture signal received from photographing means and an audio signal received from audio inputting means, comprising the steps of:

encoding, by an encoder, the picture signal received from the photographing means corresponding to a first encoding method or a second encoding method to generate first encoded picture data or second encoded picture data, respectively;

controlling a transmitting process of data and selecting the first encoding method or the second encoding method corresponding to a selected transmitting mode,

encoding the picture signal corresponding to the first encoding method when a mode for transmitting still picture data ~~without audio data~~ has been selected,

encoding the picture signal corresponding to the second encoding method when a mode for transmitting (a) still picture data with audio data and (b) moving picture data with audio data has been selected,

when the mode for still picture data with audio data is selected, generating P or B picture data for still picture data such that motion vectors are 0 for an entire frame and copying a chronologically preceding picture as the encoded picture, and

for the second encoding method after encoding the picture signal, encoding the audio data signal received from the audio inputting means, multiplexing encoded I picture signal or generated P or B picture data and the encoded audio signal, and storing the multiplexed signal to the memory means when the mode for recording both the picture data and the audio data has been selected in the camera apparatus,

wherein the multiplexed data is composed of packs with a fixed length, for the multiplexed still picture data and audio data a first pack containing encoded I video data, encoded P or B video data and encoded audio data, a time period of the encoded P or B video data being the same as a time period of the encoded audio data, and a second pack containing encoded audio data and encoded P or B picture data, and

wherein when still picture data with audio data is captured, simultaneously generating the first and second encoded picture data and encoded audio data.

69. (Currently Amended) Encoding apparatus for encoding a picture signal and an audio signal comprising:

first picture encoder receiving from a photographing device one of a still picture signal and a moving picture signal, and converting the input picture signal into an I picture corresponding to a picture format,

second encoder receiving an audio signal and converting the audio signal into a signal corresponding to an audio format,

picture generator generating fixed data of P or B data, corresponding to picture size, representing moving vectors of all blocks of one entire frame and representing a predictive code of a preceding frame, wherein for the still picture signal with audio signal motion vectors are 0 for an entire frame and a chronologically preceding picture is copied as the encoded picture, [[and]]

third encoder multiplexing signals from the first encoder, the second encoder and picture generator and supplying the multiplexed signal to an output, wherein for multiplexed still picture signal with audio signal a first pack including audio data, I picture signal data and the P or B data, and a second pack including encoded audio data and encoded P or B picture data, and

a fourth encoder receiving from the photography device the still picture signal and converting the input picture signal to an encoded picture,

wherein when the still picture signal with audio signal is received, simultaneously generating the I picture, the encoded picture and the audio format.

70. (Currently Amended) Encoding method for encoding a picture signal and an audio signal comprising the steps of:

receiving, by an encoder from a photographing device, one of a still picture signal with audio signal and a moving picture signal with audio signal, and converting the input picture signal into an I picture signal corresponding to a picture format,

converting the still picture into an encoded picture,

receiving [[an]] the audio signal and converting the audio signal into a signal corresponding to an audio format,

generating fixed data of P or B data, corresponding to picture size, representing moving vectors of all blocks of one entire frame and representing a predictive code of a preceding frame, wherein for the still picture signal with audio signal, motion vectors are 0 for an entire frame and a chronologically preceding picture is copied as the encoded picture, [[and]]

multiplexing converted picture signal, converted audio signal and the fixed data and supplying a multiplexed signal to an output device wherein for multiplexed still picture signal and audio signal a first pack containing audio data, I picture signal data and the P or B data, and a second pack containing encoded audio data and encoded P or B picture data, and

wherein when the still picture signal with audio signal is received, simultaneously generating the encoded picture, the I picture signal and the audio format.